CLAIMS:

1. An optical data storage medium for recording by means of a focused radiation beam having a wavelength λ and entering through an entrance face of the medium during recording, at least comprising:

-a substrate, with a surface including a guide groove with a depth g,

-a stack of layers on the substrate, which stack includes:

-a reflective layer of a material having a complex refractive index $\tilde{n}_{M\lambda} = n_{M\lambda} - i*k_{M\lambda}$ at the wavelength λ, n_M denoting the real part and k_M denoting the imaginary part of $\tilde{n}_{T\lambda}$, present adjacent the surface of the substrate in substantial conformity with the surface,

-a transparent layer through which the radiation beam is incident during recording and of a material having a complex refractive index $\tilde{n}_{T\lambda} = n_{T\lambda} - i*k_{T\lambda}$,

-a recording layer of a material having a complex refractive index $\tilde{n}_{R\lambda} = n_{R\lambda} - i*k_{R\lambda}$ and having a thickness d_{RG} in the groove portion and a thickness d_{RL} in the portion between grooves, being interposed between the reflective layer and the transparent layer,

characterized in that the following requirements are fulfilled:

$0.25/(3.0+ k_{M\lambda}^2) + 0.17 < g*n_T/\lambda < 0.22/(3.0 + k_{M\lambda}^2) + 0.45$ and $0.2 < (d_{RG} - d_{RL})/g < 0.5$ and $0 < d_{RG} < \lambda/n_{R\lambda}$ and $k_{R\lambda} < 0.5$ and $2 < n_{R\lambda} < 2.6$.

2. An optical data storage medium as claimed in Claim 1 wherein the reflective layer is a metal layer having a thickness $d_M > 20$ nm and $g* n_T/\lambda < 0.50$.

3. An optical data storage medium as claimed in Claim 1, wherein $0.25 < g* n_T/\lambda$ and $k_{M\lambda} < 0.5$.

4. An optical data storage medium as claimed in anyone of Claims 1 - 3, wherein λ has a value selected from the range of 650 - 665 nm and $k_{R\lambda} \leq 0.2$ at this value of λ.

5. An optical data storage medium as claimed in Claim 4, wherein in nanometers:

$0.5*d_{RG} + 42 < g < 0.5*d_{RG} + 125$ and $70 < d_{RG} < 130$.

6. An optical data storage medium as claimed in Claim 5, wherein 100 nm < g < 160 nm.

7. An optical data storage medium as claimed in anyone of Claims 1 - 3, wherein λ has a value selected from the range of 400 - 410 nm and $k_{R\lambda} \leq 0.20$ at this value of λ.

8. An optical data storage medium as claimed in Claim 7, wherein in nanometers: $0.5*d_{RG} + 20 < g < 0.75*d_{RG} + 95$ and 30 nm < d_{RG} < 80 nm.

9. An optical data storage medium as claimed in Claim 8, wherein 70 nm < g < 110 nm.

10. Use of an optical data storage medium as claimed in any one of the preceding Claims, in an optical data storage medium recording/reading device suitable for tracking of the portion of the guide groove of an optical data storage medium nearest to the plane of incidence of the focused radiation beam.